

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANT : Phillip Mackie *et al*  
SERIAL NO. : 10/009,399 EXAMINER : D.S. Nakarani  
FILED : September 16, 2002 ART UNIT : 1773  
TITLE : TREATED CLOSURES 2

DECLARATION UNDER 37 C.F.R. 1.132

COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, VA 22313-1450

I, Nicola Lake, Ph.D., as evidenced by my signature below, declare the following:

1. I received a Bachelor of Science in Chemistry with Law (Honors) from the University of Essex in Essex, U.K. in 1999. I received a Distinction in M.Sc. Management of Intellectual Property Law from Queen Mary and Westfield College, Mile End, London, U.K. in 2000. I received a Ph.D. degree in Applied Science from the Ian Wark Research Institute at the University of South Australia in 2003.
2. Since 2004 I have worked as a Trainee Patent Attorney at Madderns Patent and Trademark Attorneys in Adelaide, Australia.
3. The particular subject matter of my Ph.D. degree in Applied Science from the Ian Wark Research Institute at the University of South Australia involved photomanipulation of biomolecular architecture and surface wettability of self-assembled monolayers including alkane-thiols and silanes synthesised and grafted to suitable substrates. Light induced reversible contact angle changes could be induced due to alterations in the solid-liquid interfacial tension. Surface analysis techniques were used to deduce the underlying mechanism of photo-dimerisation.
4. I have reviewed the above-noted application serial number 10/009,399 and

the subject matter corresponding to the currently pending claims in the application.

5. Attached as Exhibit A to this Declaration is a copy of my curriculum vitae.

6. I have reviewed the reference that is mentioned in the rejection of the claims in the subject patent application, namely, Feder, U.S. Patent No. 5,140,061.

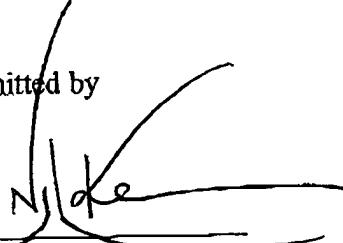
7. It is clear that the accessibility of amino groups has a significant effect on a compound's ability to retain a taint compound such as trichloroanisole. As a result of the research surrounding the present invention, it is known that the orientation of the amino groups in polymers on the surface of a substrate such as a cork has a significant effect on the ability to retain taint compounds such as trichloroanisole.

8. In order to retain a taint compound such as trichloroanisole, there must be a sufficient number of amino groups at the surface to react with the taint compound. As a result of the research surrounding the present invention, it has been found that when the aminosilanes are oriented in a monolayer (the amino groups then forming the top few atoms of the surface), the polymer is sufficiently effective.

9. The amino groups of Feder are not terminally located. Hence, the amino groups of Feder will not remove a significant amount of a taint compound such as trichloroanisole. The orientation of the polymer of Feder is not in a monolayer form. Moreover, the amino group of Feder is directly linked to an Si atom of silane. Hence, the amino group is not accessible to the taint compounds such as trichloroanisole.

10. All statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and further these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code; and that such willful false statements may jeopardize the validity of the application, or any patent issuing thereon.

Submitted by



Nicola Lake, Ph.D.

Dated: October 20<sup>th</sup>, 2005

# Nicola Jane Lake

Address: 18A Newcastle Street, Rosewater, 5013, South Australia. (08) 8240 4497.  
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## Employment

2004 - Madderns Patent and Trade Mark Attorneys, Adelaide, South Australia, 5000.

- **Trainee Patent Attorney**

## University Education

2004 - University Technology Sydney, Sydney, New South Wales, Australia.

- **Degree: Master of Industrial Property**

2000 - 2003 Ian Wark Research Institute, University of South Australia, Mawson Lakes, 5095.

- **Degree: PhD Applied Science**

*Awards:* International Postgraduate Research Scholarship;  
Postgraduate Research Student of the Year (Ian Wark), 2001;  
Ian Wark Medal for Most Outstanding PhD Thesis, 2004.

Photomanipulation of Biomolecular Architecture and Surface Wettability: Self-assembled monolayers including alkane-thiols and silanes were synthesised and grafted to suitable substrates. Light induced reversible contact angle changes could be induced due to alterations in the solid-liquid interfacial tension. Surface analysis techniques were used to deduce the underlying mechanism of photo-dimerisation.

1999 - 2000 Queen Mary and Westfield College, Mile End, London, UK.

- **Degree: Distinction in M.Sc. Management of Intellectual Property Law**

*Awards:* Herchel Smith Scholarship for tuition and maintenance.

The Queen Mary Intellectual Property Research Institute (QMIPRI) is part of the 5\* Centre for Commercial Law studies at the University of London.

1995 - 1999 University of Essex. Wivenhoe Park, Colchester, Essex, UK.

- **Degree: First Class B.Sc. (Honours) Chemistry with Law**

*Awards:* Abel & Imray Prize for best final year research project.

This four-year degree includes a full B.Sc. (Honours) chemistry degree along with a law qualification, which amounts to two-thirds of a full LL.B Law degree.

## Professional Qualifications

- Registered Trade Marks Attorney (Australia)

- **Chartered Institute of Patent Agents, Foundation Level Exams (England)**  
*Common Papers:* Basic English Law (Law).  
Basic UK Trade Mark Law (T1).  
Basic Overseas Trade Mark Law and Practice (T5).  
UK Designs and Copyright Law (D&C).  
*Patent Papers:* Basic UK Patent Law and Procedure (P1).  
Basic Overseas Patent Law and Procedure (P5).  
*Trade Mark Papers:* Basic UK Trade Mark Practice (T2).

### **Conference Attendance (Oral Presentations)**

2004 Australian Colloid and Surface Science Student Conference.  
Wirrina Cove, South Australia, Australia.

2003 11<sup>th</sup> International Colloid and Surface Science Conference.  
Iguassu Falls, Brazil, South America.  
*Awards:* Travel bursary and conference fee.

2002 Third International Symposium on Contact Angle, Wettability and Adhesion.  
Providence, Rhode Island, USA.

2002 Australian Colloid and Surface Science Student Conference.  
Lake Hume, Victoria, Australia.  
*Awards:* Hunter-Healy Award for most outstanding oral presentation.

### **Relevant Publications**

N. Lake, J. Ralston and G. Reynolds. *Surface Molecular Reorientation and Wettability of a Tethered DNA Base*. Langmuir. In preparation (recently accepted) (2004).

N. Richards (Lake), G. Reynolds and J. Ralston. *Light induced reversible wetting on structured surfaces*. Conference proceedings: Third International Symposium on Contact Angle, Adhesion and Wettability. May, (2002). Edited by K. Mittal.

N. Richards (Lake), A. Quinn, J. Ralston, G. Reynolds and R. Sedev. *Light and Electric Potential Induced Reversible Wetting on Structured surfaces*. Functional Fillers and Nanoscale Minerals, SME. Annual Meeting, Cincinnati, USA, June, (2003). Edited by J. Kellar, M. Herpfer and B. Moudgil.

### **Key Achievements**

- Committee member of IPSANZ South Australia (2004);
- Student Representative to the Executive at the Ian Wark Research Institute (2003);
- Key member of the Ian Wark Social Club (2001);
- Successfully passed the entrance exam to become a member of MENSA (1998);

### **General Skills**

- An ability to master new concepts quickly;
- The nature of my degree allows me to interface between disciplines of law and science with ease;
- Capable of working in a team, being assertive, enthusiastic and motivating;

- Possess excellent communication skills, both written and verbal, with an ability to build productive relationships at all levels;
- Educated by *Kaleidoscope Corporate Computer Trainers* to a very good standard of computer literacy in Microsoft Office (1999).

### **Interests**

- Active Advanced-level PADI scuba diver;
- Downhill skiing;
- Collecting and tasting Australian wines.

### **Referees**

Prof. John Ralston.

Director.

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University of South Australia,  
Mawson Lakes,  
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